

“PROMOTION OF SCIENCE EDUCATION IN INDIA THROUGH SOCIAL MEDIA”

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ABSTRACT

To develop the interest and temperament for good science and to begin a discussion within scientific community exciting science journalism is necessary. Definitely skill and knowledge of science journalism and delivering these posts on the social media wall will promote and contribute significantly to develop the orientation of community towards science. The approach to motivate students towards science education is highlighted in this paper. Although my concern in this paper focuses on how social media helps to promote science education among the youth in India.

KEYWORDS: Good Science, Scientific Community, Journalism, Social Media & Science Education

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INTRODUCTION

The power of the media to manipulate public opinion and its use by politicians to advance their political ideology is well known. As a great asset of the Government Machinery, media is being used to persuade and to control the mass as per the set agenda. These merits and virtue of media can be applied in the promotion of science education. Explaining scientific research and inculcating scientific temperament to the general public is a noble effort. Having a scientific background, thinking and writing skills will have a real advantage over most journalists, who typically are trained in journalism rather than science. Writing for promotion of science and technology, largely depends on the type of media through which it is going to be delivered. i.e. print, radio and television. Generally three forms of media are being used in portraying the science related information. But recent developments in information technology, enable the users to reach the mass through a very democratic easily available interactive media i.e. social media. Most important, writing for a social media user is a wonderful way to tell if you really understand something on the topic of science. Basically the science journalist is essentially a teacher or scientist who always writing to popularize, to create interest among the people towards science. Here science education can be promoted by the scientists, science teachers and science journalists through posting the text, audio, image and video on the social media wall and alerting people to aware about advantages of science education. It can be entertaining to write and to discuss on science and technology with social media friends. Excellent writing forms a very important part of the culture of science and technology, and can be instrumental in fostering a good scientific temperament in the wider society.

More recently, newspaper readers, television viewers and radio listeners are going online to seek the updated information. Print and Electronic Media are still here, but facing a challenge from interactive social media.

¹ Social media have changed several areas since ancient times, including way of business, art and culture, physical boundary of the nation, way of administration and education system. At present, social media is mostly used to share information, post photos, videos, comments, and sales. Social media in the educational system may be an

interesting tool and the creation of virtual environments to complement traditional learning is significant to promote science education among youth. We live in a world that is constantly becoming developing with new concepts and ideas. Implementing these ideas to develop a scientific temperament among the huge population is crucial for today. The importance of language in communication cannot be ignored as Edward Sapir said, "Language is not only a vehicle for the expression of thoughts, perceptions, sentiments, and values characteristic of a community; it also represents a fundamental expression of social identity".² Further John Stuart Mill said that "Language is the light of the mind".² It means language plays a significant role in portraying the message and information. The language of science content will encourage to the target audience and so lucidity of technical information, well explained jargon and difficult words of a scientific report will ensure the turns of students towards the science education. Further promotion of science and technology will help to develop the observational skills so that one can understand the complex principles and comprehend the mechanism of machine functioning. Definitely through proper use of social media tools scientists, teachers and science journalists who are effective at networking sites are able to show improvements in student's interests towards science education.

PERCEPTIONS OF SCIENCE

In India, gradually falling in the enrollment of learners to science studies is a warning citation. As a developing country India needs more scientists. The condition of Science in the India is very poor and needs a serious concern to the number of students opting science education. The falling enrollment to scientific discipline is observed as a large problem in most of the developing as well as developed countries. The same downfall continued in India also. Unfortunately, countries developed in scientific research and innovations are now facing a lack of interest in science education and pursuing careers in its. The importance of science and technology in the growth of a country is well accepted, but young generation is not willing to pursue the science education in their studies or careers. Instead, they choose their field on their own choice, standards and morals. It is obvious that orientations towards science education are no longer lure in developed countries. The diminishing interest in science education is a setback for the economic development and simultaneously a bigger threat to democracy, as most decisions in modern societies are highly dependent on considerations that involve weighing scientific arguments against value judgements. An irrational and scientifically unaware voting population can be easily influenced according to set agenda. Science organizations must be partnered with universities, libraries, laboratories, academicians and science reporter to train skilled citizens on new media to learn about pro and cons of science and enabled them to express their views, share information spread their knowledge to develop "civic science media literacy" syllabi.³

For any student, tough competition, boring curriculum and non serious teacher may be the reasons for decreasing interest towards learning. But youth is losing the attention, especially towards science education because of their teachers are uninspiring. The content they deliver to students that are boring and thus they failed to draw their interest in science subjects. When we compare the curse and boon of the science, the demerits more prominently appear in the path of development of the society. General Science is responsible for many of the problems of human beings, like pollution, imbalance of the ecosystem, ozone depletion, and severe exploitation of natural resources. Still, there are following few points through which these youth can be motivated to choose the science education in their further study:

- Science Education is significant for society
- To become developed society, an individual must have scientific temperament
- Science Education will spread the awareness about the diseases and controls the spread of AIDS and other serious

diseases further among large populations.

- Science Education will make our lives healthier, easier and more comfortable
- Science facilitates the work done smoothly with little effort.
- Science Education will help to control population, pollution and eliminate illiteracy
- Science Education will create awareness in mass and reduce the environmental problems

PROMOTION OF SCIENCE IN INDIA

Before independence, some nationalist scientists and science teachers were trying to promote science among the Indian. In 1913 Science Academy was established in Allahabad and at the same time the Bangla Science Academy in Kolkata. In Punjab, Professor Ruchiram Sahni father of famous botanist Professor Birbal Sahni, devoted himself in the promotion of science. A Marathi Teacher promoted science education by publishing the oldest Science Magazine “Sristi Gyan”. The Indian government and several voluntary organizations were continuously making trial and testing with various plan, to promote science education in order to transform India’s multilingual and multicultural society into a nation of scientific thinking and scientifically aware people (Patairiya, 2002).⁴

After independence, the task of promotion of science and technology in India was undertaken by the first Prime Minister Jawaharlal Nehru. He is considered as a major force behind developing a scientific culture and importance of promoting science education in India. Pt. Nehru understood the urgency to inculcate scientific character in citizens for a newly independent India. Though he provided a large platform for development and promotion of science by establishing labs around the country, attending science forums and giving motivational talks, the establishment of science and technology would not have been possible without the help of insightful leaders’ like BP Pal (agriculture research), Vikram Sarabhai (space program) and Homi Bhabha (atomic energy). Since the early times, India has come a long way in terms of planning and developing science and technology. The establishment and development of IITs, medical and scientific institutions had a major impact on the science and technology community. In Delhi Dr. Bal Krishn Nair, Dr. B. R. Nagar, Sh. Harish Agrawal, Sh. P.R. Gupta and others Scientists and Science Journalists came together to raising a “Science Writers Association of India. SWAI had organized several seminars in association with Press Institution of India and CSIR and published the proceedings. Very soon Indian Science Writers Association, founded under the chairmanship of Dr. K.S. Jayaraman, who was an earlier science correspondent of Press Trust of India. Since long back this institution has started organizing Indian Science Communication Congress. In 2010, ISWA on the occasion of its Silver Jubilee celebration had organised an 11th International Conference on “Mass Communication of Science and Technology” in association with International Network on Public Communication of Science and Technology (PCST- Network), National Council of Science and Technology Communication (NCSTC-DST), Madhya Pradesh Council of Science and Technology (MPCOST) International Centre for Science Communication (ICSC), and International Centre for Science Communication Society (ICSCS). There were so many magazines started publishing regular column on science and technology to feed the demand of children and science students.

In 1982, for promotion of science education, a proposal letter was drafted for Parliamentary Science Advisory Committee in a meeting of Indian Institute of Mass Communication in which it was decided to establish a nodal agency under the Department of Science and Technology. This nodal agency was established in 1983 and its first and second

meeting were convened on 08th Feb 1984 and 24th May 1985 respectively and it's named as National Council for Science & Technology Communication (NCSTC). It was started promoting science education through various media, i.e. both traditional and modern. "Bharat Kee Chhap" was produced by NCSTC and it was broadcasted by Doordarshn's national network during Prime Time in 1989. To get rid from the red tapism into fast promotion of scientific culture an autonomous organization 'Vigyan Prasar' under the Department of Science and Technology was set up. It is one of most successful institution active in coordinating among universities, scientific organizations, laboratories, and several others in academic institutions for sharing, exchange and delivering of valuable scientific information.

The Indian National Scientific Documentation Centre (INSDOC) was set up in 1952, to provide information support to the scientists and researchers of the country, and National Institute of Science Communication was set up in 1951 to publish scientific journals, periodicals and to compile data and information on science and technology. Both the organization working with the same objective, so on the recommendation of a review committee chaired by Professor Abid Hussain, the CSIR society and Governing Board of CSIR approved merging of INSDOC and NISCOM into a single unified w.e.f.30 Apr 2002 i.e. National Institute of Science Communication and Information Resources (NISCAIR).⁵ The major functions of NISCAIR are to provide communication among the scientific community, to disseminate science & technology information, and to develop human resource in the field of science education. With the prime goal of the promotion of science and to develop scientific cultures among the people of India and to generate scientific awareness to all sections of the population, NISCAIR is always busy in composing and framing the programs.

Efforts of Media Giants

Use of social media to improve the learning of science for youth, and going on- line is a great way to enhance our resources and reach more people. Social media platforms can provide teachers a multitude of resources and guides to teach various materials. Large media groups are helping to promote positive messages to the people of the world. These prominent organizations act as a gatekeeper with great responsibility to check the validity and credibility of the information, and deliver these scientific research development and science news directly to large populations. Earlier Indian journalists were preoccupied with a set goal to write against the British Government, that missionary zeal is required again to promote science education among the youth through journalistic profession through social media. These experts can be great assets for delivering the science education to a large number of audience. Further, they can be requested to use the social media forums and participate in disseminating the messages of science. People cannot be forced to choose the science subject in their study, but their orientation can be directed towards science by repeated and comprehensive writing which attracts the youth towards science education. Initial interest, curiosity and hunger for science can be developed among general people through interesting script.

The effects of the writing on the social media wall affect different groups of the people in different ways:

Spiritual Group

India is a place of multicultural and multi religious society, who have strong faith in their religion. All communication related to science needs to be understood in perspective of various religions, so that these messages can be disseminated across the large spiritual crowd. Scientific explanation of incidents, accidents and occurrences in our religious books will enhance the understanding of scientific principles of mass people.

Professional Groups

Scientists, science journalists and science teachers must always concern to bring changes in attitude of mass people towards science education and behave as a role model to change their perception. Cautious and concern writing will ensure the positive changes in the mind set of general people.

Peer Groups

People of various age groups have different level of comprehension. They have a different topic to discuss in their peer group. While disseminating the science news and research one has to consider and according scientific content can be created. Adults are more tech savvy and can adopt the new changes quickly and promptly in comparison to older generation.

POTENTIAL OF SOCIAL MEDIA IN SCIENCE EDUCATION

Social media is a very difficult term to define clearly. The descriptions of social media stress that “a unique aspect of many social media sites is that their content is concreted.”⁶ Kaplan and Haenlein defined the social media that: it is a collaborative projects such as Wikipedia, blogs and micro-blogs (eg. Twitter), content communities (eg. YouTube), social networking sites (eg. Facebook), virtual game worlds (eg. World of Warcraft), and virtual social worlds (eg. Second Life) (Kaplan and Haenlein, 2012).⁷ Twitter, Pinterest, Facebook, Whatsapp and YouTube are the possibilities for finding science resources and scientific research development news through social media. As per the on line report publish by the CNBC, Facebook had 1.86 billion monthly active users in last quarter of 2016, and the users number is increasing rapidly. With this rapid growth of Facebook users, student users are most active and large in number. According to survey conducted by the Pew Research Center, 72 percent of high school and 78 percent of college students spend time on Facebook, Twitter, Instagram, etc. Fast growing user number in virtual world shows the deep involvement and addiction towards it. Students devoted to social media in socializing with their friends because social media provide them the freedom to publish any content they want without any filtration, without any barrier, even one can access to some one profile to collect any information. This freedom of mind can explore many things which are still unearthed. Freedom of mind is the primary requirement for any scientific research, though it must be in controlled directions.

Earlier the lifestyle of a student was influenced by parents, teachers and great leaders, whereas now it is largely decided by the virtual word of he/ she is the member. It has been observed that the habits that students learn are mostly decided by what their friends act instead of teachings of parents or teachers. But it is the responsibility of elders, parents and teachers to properly guide the student. Generally youngsters are unstable and easily lose their self-control, but after going through the lifestyles of great personality, and acquiring the information about successful leaders they are trying to inculcate and follow the same style in their live. It is true that every coin has two sides and social media is not detached from the golden rule. Dark side lure the students, but the benefits and charming face of the science education can be portrayed by the use of social media. The complex principles of science can be translated and generalized for the students.

Definitely, activities and incidents that draw maximum attention hold high values. All scientific research and its application in human life are more value added and thus subject to share in a large group. A research in social science showed that whenever podcast any information, it immediately affects the other user or friend in the list, and he/she is motivated to pursue that subject deeply. Bare study of books and attending classes may lead a student to stress, anxiety or fear about complexities present in the formulae and tough equations of science. Continuous monitoring of the social

networks and its content, in this way even leads to depression. For building a great nation, it is significant that its citizens are equipped with good moral character and always busy in attaining good habits and gaining knowledge and skills. Now day's students are trying to escape from the hardship of solving the scientific problems and found busy in developing social connections on social media. Participation in a social forum where science and its problems are being discussed actively and frequently will affect the grades and enhance reasoning in them.

The open discussion activities on Social Media Forum attract rigor, students and motivate to increase their scientific knowledge and skills. Continuous participation of students in discussion gives opportunity to comprehend the subject properly and consequently develop their own set of thoughts to validate. The social media forum also provides ideas and questions for those students who failed to formulate their own questions, but are ready to work hard and interested to pursue science education. The close monitoring and quick rectification as per the response of the students of the science community will enrich the students on science related topic. Hearty discussion and resultant outcome will raise the confidence in students to further explore science and take the research in next higher echelon. Social media can be integrated with science learning. There are following ways to engage the class with social media. It will be advisable here to take extra precaution, be vigil and ensure that students are safely sharing their information and their learning experience.



Figure 1

Twitter

Guide or supervisor can share and retweet the information and views of scientists and science journalists and other tweets on science. Content delivered through twitter may motivate and promote students in current scientific issues. Vast ranges of resources are available to help for promotion of science. Twitter can be a great source of learning new skills and technique. Everyone is aware of Twitter as a source of science news and scientific information and proved as a great source of learning, watching informative videos, and updating on new developments in science. Following are the few Twitters accounts to inspire, educate, and encourage the science education among the general students.

- **Science Education @Science TCD**

Tweets: "Gosh, I really don't think there is a masters course that will help me to explore the role of science in society"

- **March For Science IE @Science March IE**

Tweets: Happy #St Patricks Day to our #Science March friends around the world, from #March For Science Ireland

- **Nature News & Comment Verified account @ Nature News**

Tweets: Interest in epigenetics surges as rediscovered chemical tags on DNA & RNA shake things up:
<http://go.nature.com/2lnKK1Y>

Whatsapp

Guide of the group can share facts, data and information to the group of students as it allows the students to document and share scientific information and knowledge. A news published in Times of India dated 17 Feb 2017 from Mysore that “A group of government-school teachers from Mysore is using WhatsApp to discuss science and mathematics topics with their students. The idea of starting the group was initiated by HD Kote Government School science teacher Praveen Kumar Sayyapparaju three years ago. The group Vijnan Vedike Kote (ViVek) was started with 20 government teachers within the HD Kote talk and they regularly interacted on science and mathematics subjects. They'd resolve doubts by uploading videos, graphs and audio clips when a member raised doubt on a particular topic. Praveen, an IIT Madras graduate, joined a government school because he was passionate about teaching students from a rural background. After learning that government teachers lacked proficiency in science, Praveen decided to first enhance subject knowledge among teachers. He started the group to share subject details and make teachers more resourceful. "Every Sunday, the group moderator would suggest a topic and members would interact in it, raise doubts and share information. For one week, members discuss that particular issue. On Saturday, the moderator integrates all the discussions and a summary of the topic will be posted," he said.”

Pinterest

Social media savvy students can gather information and comprehend the visuals related to science. They can find and save ideas about Science on Pinterest, Followings are the few examples.



Figure 2

Blogging

It can be an aid in science learning in peer to peer science learning. Teachers, scientists and scientific journalists can update students about recent scientific developments through their blogs. One thing is pretty sure that blogging is safer and more easily accessible than other tool of social media. It is a low cost for publishing information and get global attention.

Facebook

Facebook is a widely used social media tool and suitable forum to share new information that may be personal or public. Generally Facebook pages look like profile pages through which user share ideas and news. It can also be used as a great tool in disseminating science news. Teacher, scientist and science journalist have to closely monitor and control the discussion and address all the queries raised by the students. There are following few Facebook pages that provide excellent scientific information on animals, technology, aerospace, marine technologies and scientific development on medicine and fitness: ⁸

- **Nature**

This is a popular Facebook page for students seeking information on animal. Since Facebook is an interactive medium, so contents uploaded by the users are also of the same importance. Posts on the wall provide further many links where valuable information can be found out.

- **Popular Science**

Plenty of information on Science and Technology is available on this Facebook page. Social Media user can check the user's comments and uploads also. Scientific reports available on these pages have wide impact the coming generation. News related to space, electronics, biology and chemistry is frequently being posted.

- **Physics Today**

A great forum for science news. What's the new development in the field of Physics can be seen here. Even 'Articles' on Physics and other interesting information on science are available here, which are very useful for student pursuing their study of science.

- **Shedd Aquarium**

This page devoted to Marine Biology. It delivers the information to its users through attractive photos and awesome videos which perfectly suit to young students. It also provides links for article on ocean life and informative videos on marine conservation.

- **NASA**

The Facebook page of the National Aeronautics and Space Administration keep updating the recent development of space research, and other related topics in astronomy. All discussions on the page are very informative and quite humorous. This is the best platform to share the knowledge on astronomy.

- **Discovery Health**

It's the Facebook page provides by the Discovery Channel. Here relevant articles and information on fitness and health are continuously posted by the administrator of the page, which are of great importance to all human beings.

YouTube

YouTube is the ocean of videos which provides its users a lot of information on various topics. Each video is embedded with HTML information that is used to access that clip on the internet. Several video clips of complex scientific principles can be accessed through this platform. The writing on science related issues on social sites can be highly

inspiring in science learning, but shooting a video and uploading it to YouTube for its user is a great contribution to science education. The main ideas and complex principle of science is not so easy to comprehend by the learners and that is why many students drop out of science classes. Text supported with pictures and videos portray the relevant messages to the users can be grasped easily by the learners instead of boring text. Illustrations and images must be effectively integrated into inquiry-based instruction. Learning by inquiry involves, among other skills, observation in nature over time. Weather, natural and several other artificial hindrances are there on the way of students learning science through observation, whereas these videos are a boon and great assets for science learning, even with limited resources. While many scholars might argue that observing phenomena in nature is important, the use of illustrations and images of social media forum offers a practical and effective way to introduce and teach science concepts to young children.

Social Media provided best learning tools for students and making easy and interesting for the students. Particularly the contribution of Facebook and YouTube are amazing for the science learners. A standard procedure and suitable principle may be set up for the students and strong and continuous monitoring required for social media users. Students are only allowed to access the social media tool in strict supervision of administrator that may be science teacher, scientists or science journalists. Following are best practice principles for students, namely:

- First one has to set the objective,
- Identify the potential of each participant (user),
- Start communication with other users (students),
- Interact with all students on course content only,
- Motivate all for active participation, and
- Keep on healthy discussion in healthy environment.

MOTIVATING CHILDREN TOWARDS SCIENCE EDUCATION

It has been noticed that many students like images, audios and videos more than text, especially those with educational information. A student who is an active user of social media stated: “text is sometimes boring, but when there's a video, I feel excited to watch it until the end and become interested in reading the text.”⁹ The prime responsibility of a science forum is not so much to teach the science subjects in detail, but to create in each user a need or desire to know the science and technology and stimulate them to create interest towards science. Consequently, students can understand an exact and concerned impression of what science education demands; in particular provide persuasive facts that awareness of science is an integral part of an educated, sensible society. Discussion on scientific issues would also help students to build up an ability to imagine, sincerely, so that after analyzing the available data and information, they can reach at concrete conclusions. Social media forum can encourage students to develop the more scientific skills and apply them in significant research works.

Science Applications in Daily Life

Children's curiosity to know the reason of any occurrence of a particular natural incidence that is appropriate. They are more interested to know about forces and motion and with the experience they come across the arena of questioning, how to frame practical scientific questions. However, parents and teachers can take benefit of the innate

quality of children's curiosity to know about nature, and by incorporating it into their study. Since they are curious to find out the cause of all natural phenomena as soon as possible, it will be advisable to incorporate such topics in their syllabus. Application of science in daily life and its significant value for existence of life will certainly motivate to study science to those students who know how science is going to affect their lives directly or indirectly in their future well-being. Apart from the utilitarian value of science, it also embedded with aesthetic value, a "rhythm and a pattern between the phenomena of nature which is not apparent to the eye, but only to the eye of analysis" (Feynman, 1965). Definitely the aesthetic parts are a basic cause of individual pleasure and academic inspiration for a scientist. Imagine about, physics Nobel Laureate Subrahmanyan Chandrasekhar's response to a result of Einstein's theory of general relativity (Curtin, 1982):

*"In my entire scientific life... the most shattering experience has been the realization that an exact solution of Einstein's equations of general relativity... provides the absolutely exact representation of untold numbers of massive black holes that populate the universe. This "shuddering before the beautiful", this incredible fact that a discovery motivated by a search after the beautiful in mathematics should find its exact replica in Nature, persuades me to say that beauty is that to which the human mind responds at its deepest and most profound."*¹⁰

Formulating the Science Systematically

Apart from being relevant, the messages delivered related to science must be systematic and comprehensive to meet and address the students need to understand the critical concepts of science. Their understandings about science are continually assessed on different levels of local, state, national and international standardized assessments. Science Scholar and Science Journalist must use writing in science as a source for student learning and thus creates an interest to learn more in science. Writing expectations from an administrator of science group is to be clear, precise and lucid while writing on the social media wall. For example, students should be instructed about what kind of issues can be discussed on the forum and how to put their views systematically on it. In addition, each participant writings comment must also speak in depth on the subject. This highly focused and systematically formulated science will greatly assist students to solve the mentally intense kind of inquiry with grasping scientific concepts.

Writing Science Related Posts

Evaluating the importance of scientific news and penning it down can be painful. Although a user (who creates the scientific news) tends to be specialize and trained in science writing and science journalism. They must be aware about the suitability and popular way to communicate science write up. Lacuna either in science specialization or in writing skills, will lead to improper communication of scientific developments among the scientists and science students. Generally misrepresented information creates confusion among students and reduces the interest towards science education unreasonably. Though in traditional media, more science news still competes for space, but as public interest in science increased, some newspapers created sections and electronic media started program exclusively based on science.

Using Trustworthy Source of Information

Texting of science news for posting on the social media wall is of great importance. In brief Harold Lasswell said, "Who says what in which channel to whom with what effect". The seriousness and authenticity of sources of information to establish the credibility of the social media page. 'Who' in the communication process is an important factor in communication and that is why a statement of great leader widely accepted by the reporter and the public as well without

checking the validity of the information, though he/she may not be the specialist in that particular field. This concept of authority in journalism leads a serious problem. Regardless of problems within the scientific community, it also happens almost daily when social media carries misinformation on science. Even today, after so much technically advance media failed to inform the general public on scientific issues. Though the podcasting of science news via the social media is a great challenging task, but a very interesting noble profession. Now the work of all scientists, science journalists and science teachers are intertwined, and need more cooperation in furnishing the detail information on science to the scientific community and science students.

In India, several newspapers have separate sections exclusively for science related issues either in the form of weekly supplements or as a daily page. The emerging new way of layout of traditional media is certainly a positive indication for the scientific temperament in the country. **Vigyan Prasar's (VP)** program on Science broadcasts by television as a major movement. The objective of broadcasts on different aspects of science is to clarify the hidden reasons and scientific cause of any occurrence in nature through different Indian languages to inculcate scientific temper in diversified society.¹¹ **Discovery Channel**, is a most dynamic networks on television which has assigned to broadcasts the highest quality non-fiction programming in the world. It was launched in 1985, and viewed by more than 180 million subscribers in Asia Pacific. It provides the audience high-quality non-fiction videos on science and technology, and classical documentaries on culture and ancient history.¹² All India Radio broadcasts **Vigyan Bharati** science magazine program which is devoted to scientific issues and subjects, on every 4th Wednesday. Though the efforts made by traditional media, especially the contribution of Electronic Media in promotion of science education cannot be ignored, but still it need little more attention.¹³

The significance of a scientific research is neither appreciated by the untrained journalists the way it needs, nor are all scientific information published at the time that they are discovered. On the other hand, discoveries and observations of little relevance may be published on the front page if they will catch the attention of the general public. Consequently, it depends upon the journalists how smartly communicate the major discoveries which might have gone unnoticed by the general public.

SUGGESTION AND CONCLUSIONS

Stakeholders in science should be conscious of the importance of keeping society well informed of their activities through many tools of social media. The heads of schools, academic institutions, and scientific institutions should adopt courses of action to achieve the goal. Undoubtedly the scientist's main and basic mission is the scientific research, but they must also bear the responsibility of portrayals of his scientific research to the society. In this regard it has been observed that their poor communication skill becomes the hindrance in communication the scientific research. Though they may be excellent in science but lack of communication skill and poor journalistic approach create a setback in proper sharing of information to mass. To fill the wide gap between the scientific work and its portrayal to mass, the journalist must be trained in science stream so that he/she can communicate the scientific work to the mass audience. This proper flow of information and portrayal of scientific work and research will create the scientific temperament among the youth. In precise it can be mentioned that all institutions must have scientific communicated/ scientific journalists as these professionals are in the best position to convey a scientific result and able to motivate youth to choose science in their advanced studies.

The methods of promotion of science education discussed throughout this paper are all shaped from the thought that the promotion of science education is most successful when stakeholders are super active. They have to always on the front foot and continuously monitor the new development in the field of science. Pro and cons of new research in science and technology will affect the young generation who bears the most responsibility on their shoulder. So to spread these messages of the boon and curse of science, it must be conveyed in all corners of the society irrespective of breed and class. Though it is very easy to promote science education in urban tech savvy and higher echelon of society, but a great challenging task when you enter in a downtrodden, exploited and far flung of rural areas. However, social media provides a democratic forum where we can form a community and discuss the basics of science. Now the administrator or the moderator who controls the discussion on the social sites bears the greatest responsibility. He/she has to be very knowledgeable, science teacher, and always attentive towards any new development in science. In this regard one has to be very particular about the protocol of the community, where only science related matters must be dealt. To teach science well, one needs to have the attitudes of a scientist and simultaneously always active to share this information among the group members. The science teacher whose teachings focussed on lessons and abides only from the textbook content, whose notes have yellowed with time, and whose ideas, concept and thoughts of scientific practice, cannot motivate, inspire students and create interest in science education. Teachers must harness themselves with social media friendly and be self motivated and inspired: to read avidly and regularly in order to learn lessons of the past and keep abreast of the present; involved in research in order to teach with confidence based on personal experience; to try in all ways possible to make the science forum/ community active and able to resurrection of community members to promote the science education in an effective way. From this study one more result can be drawn. The use of social media in promotion of science education does not result in a denial of the traditional media which are still being used prominently. Broadcasting or publication of science report or science script does not mean that these mass media journals, magazine, radio and television channels are failing to popularize the science education among the general public. For the promotion of this science education and inculcating a scientific temperament among the Indian citizen both traditional as well as social media are useful.

ENDNOTE

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